60130-1052

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Breynaert, et al.
Serial No.:	09/833,865
Filed:	April 12, 2001
Group Art Unit:	2834
Examiner:	Le, Dang D.
Title:	CONNECTOR WITH FLUX CONCENTRATOR FOR ELECTRIC MOTOR AND CORRESPONDING GEARED MOTOR

Box AF
Assistant Commissioner of Patents
Washington, D.C. 20231

APPEAL BRIEF

Dear Sir:

Subsequent to the filing of the Notice of Appeal on January 9, 2003, Appellant hereby submits its brief. The Commissioner is authorized to charge Deposit Account 50-1482 in the name of Carlson, Gaskey & Olds, P.C. $320.00 for the appeal brief fee. Any additional fees or credits may be charged or applied to Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds, P.C.

REAL PARTY IN INTEREST

The real party in interest is Meritor Light Vehicle Systems- France, the assignee of the entire right and interest in this Application.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

16. The connector as recited in claim 4 wherein said electrical power contacts include an end, and a metal pad is inserted into said end of each of said electrical power contacts which overlap said magnetic ring.

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7. The connector for an electric motor as recited in claim 5, wherein said power contact constituting a part of said magnet flux conduction member is made of steel.

8. The connector for an electric motor as recited in claim 1, wherein said connector is secured to said printed circuit on which said Hall-effect sensor is disposed.

9. The connector for an electric motor as recited in claim 1, wherein said connector is adapted so as to be fixed in a detachable manner on said electric motor.

10. A geared motor for an automobile accessories comprising a connector for an electric motor, adapted so as to be fixed on said motor including a magnetic ring which is a seat of a magnetic field related to operating parameters of said motor, wherein said connector comprises a magnetic flux conduction member forming a flux concentrator interposed, when said connector is fixed on the motor, between said magnetic ring and a Hall-effect sensor adapted so as to measure magnetic flux conducted by said magnetic flux conduction member, and a printed circuit having a current supply source for said motor fixed thereon.

11. The geared motor as recited in claim 10 wherein said automobile accessory is a window.

12. The geared motor as recited in claim 10 wherein said automobile accessory is a seat.

13. The geared motor as recited in claim 10 wherein said automobile accessory is a sunroof.

14. The connector as recited in claim 3 wherein said two metal pins are made of steel.

15. The connector as recited in claim 3 wherein said two metal pins are parallel.

CLAIM APPENDIX

1. A connector for an electric motor, adapted so as to be fixed on said motor including a magnetic ring which is a seat of a magnetic field related to operating parameters of said motor, wherein said connector comprises a magnetic flux conduction member forming a flux concentrator interposed, when said connector is fixed on the motor, between said magnetic ring and a Hall-effect sensor adapted so as to measure magnetic flux conducted by said magnetic flux conduction member, and a printed circuit having a current supply source for said motor fixed thereon.

2. The connector for an electric motor as recited in claim 1, wherein said magnetic flux conduction member comprises at least one metal pin adapted so that a part of said pin, when said connector is fixed on said motor, lies in a vicinity of said magnetic ring.

3. The connector for an electric motor as recited in claim 2, wherein said magnetic flux conduction member comprises two metal pins having free ends disposed symmetrically with respect to an axial plane of said magnetic ring.

4. The connector for an electric motor as recited in claim 1, wherein said connector further comprises at least two electrical power contacts linked to said supply source for said motor.

5. The connector for an electric motor as recited in claim 4, wherein at least one of said electrical power contacts is disposed so as to constitute a part of said magnetic flux conduction member.

6. The connector for an electric motor as recited in claim 5, wherein said power contact constituting a part of said magnetic flux conduction member is connected, when said connector is fixed on said motor, to a metal pad secured to said motor and a part of which lies in a vicinity of said magnetic ring.

for an electric motor that includes a current supply source fixed to a printed circuit as required by Claims 11-13, and Appellant's claims are not obvious.

CLOSING

For the reasons set forth above, the rejection of all claims is improper and should be reversed. Appellant respectfully requests such an action.

Respectfully Submitted,

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Dated: March 10, 2003

CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, TC2800, After Final, 703-872-9319 on March 10, 2003.

Karin Butchko

Appellant's a metal pad that lies in a vicinity of a magnetic ring, and claim 6 is not obvious.

Additionally, as shown in Figures 2 and 4 of Weber, the guidance systems 14, 16 and 18 does not contact either the printed circuit board 20 or the magnetic ring 10. If electrical power contacts were incorporated into the guidance system 14, 16 and 18 of Weber, the electrical power contacts would not contact the printed circuit board 20 as the guidance system 14, 16 and 18 does not contact the printed circuit board 20. Therefore, the electrical power contacts would not be able to act as a current supply source as there would be no contact of the guidance system 14, 16 and 18 with the printed circuit board 20. A rejection based on obviousness is improper for claim 6.

H. The rejection of Claim 7 is improper.

The rejection of Claim 7 is separately contested from the rejection of Claims 6. Claim 7 set forth steel electrical power contacts that are linked to the supply source on the printed circuit board. Weber discloses that the guidance system 14, 16 and 18 can be made of a ferrous material, such as iron. However, Weber does not disclose or suggest that the guidance system 14, 16 and 18 is made of steel as required by Appellant's claims. Therefore, the combination of Weber and Hulsmann does not disclose or suggest Appellant's claim 7, and a rejection based on obviousness is improper for claim 7.

I. The rejection of Claims 11-13 is improper.

The rejection of Claims 11-13 is contested. Claims 11-13 stand rejected as being obvious over Weber in view of Hulsmann and further in view of Wiesler (United States Patent No. 6,127,752). Wiesler discloses an automobile accessory such as a window, a seat, or a sunroof. The Examiner contends that it would be obvious to employ the connector of Weber in a window, a seat, or a sunroof as suggested by Wiesler, and therefore Appellant's claims are obvious. Appellant is not claiming to have invented an electric motor used with a window seat, a seat, or a sunroof, but rather a unique electric motor employed in an automobile accessory such as a window seat, a seat, or a sunroof. The combination of Weber, Hulsmann and Wiesler does not disclose or suggest a connector

Hulsmann does not disclosed or suggest Appellant's claim 14, and rejection based on obviousness is improper for claim 14.

F. The rejection of claim 16 is improper.

The rejection of Claim 16 is separately contested from the rejection of Claims 1 et al. Claim 16 sets forth that the connector includes at least two electrical power contacts that are part of the magnetic flux conduction member. The claims further adds a metal pad that is inserted into an end of the power contacts and that overlaps the magnetic ring. As shown in Figure 4 of Weber; the guidance system 14, 16 and 18 includes curved end portions which are shaped around the outer circumference of the magnetic ring 10. The guidance system 14, 16 and 18 does not disclose a metal pad inserted into the end of the guidance system 14, 16 and 18 which also lies in the vicinity of the magnetic ring 10. Therefore, the combination of Weber and Hulsmann does not suggest or disclose Appellant's claims. The rejection of claim 16 is improper, and Appellant requests that it be withdrawn.

G. The rejection of Claim 6 is improper.

The Examiner further rejected claim 6 under 35 U.S.C. §103(a) as being unpatentable over Weber in view of Hulsmann and further in view of Blanchet (U.S. Patent No. 5,453,649). Blanchet discloses a drive unit for a motor vehicle including an electric motor 10. As disclosed in column 4, lines 39 to 41, wires 92 (which the Examiner is calling the metal pad) connect carbon brushes 90 to parts 94 of a conductive structure. The Examiner contends that it would be obvious to connect a metal pad to the signal guidance system 14, 16 and 18 of Weber.

Claim 6 sets forth electrical power contacts that are part of the magnetic flux conduction member and linked to the current supply source on the printed circuit board. The claim further claims that the electrical power contact is connected to a metal pad that lies in the vicinity of the magnetic ring. The wires 92 of Blanchet connect the carbon brushes 90 to the parts 94. The wires 92 connect these two components. However, Appellant's claims require that the metal pad lies in the vicinity of the magnetic ring, and not that the metal pad is connected to the magnetic ring. The combination of Weber, Hulsmann and Blanchet does not disclose or suggest

elements 203 do not supply power as required by Appellant's claims, but rather conduct the power. The combination of Weber and Hulsmann do not disclose or suggest Appellant's claims, and Appellant's claims are not obvious.

Additionally, as shown in Figure 2 of Weber, the guidance systems 14, 16 and 18 guides the signal from the magnetic ring 10 to the signal receiver 22, 24. The guidance system 14, 16 and 18 does not contact the printed circuit board 20. Therefore, even if the printed circuit board 22 of Weber included a current supply source, the current supply source could not provide current to the motor because the guidance system 14, 16 and 18 does not contact the printed circuit board 20. Therefore, it would not be possible to employ a current supply source on the printed circuit board 22 as required by Appellant's claims, and Appellant's claims are not obvious.

D. The rejection of claim 5 is improper.

The rejection of Claim 5 is separately contested from the rejection of Claims 1 et al. Claim 5 sets forth that electrical power contacts are linked to the current supply source, and at least one of the electrical power contacts is part of the magnetic flux conduction member. As shown in Figures 2 and 4 of Weber, the guidance system 14, 16 and 18 does not contact either the printed circuit board 20 or the magnetic ring 10. If electrical power contacts were part of the guidance system 14, 16 and 18 of Weber, the electrical power contacts would not be linked to a current supply source on the printed circuit board 20 because the guidance system 14, 16 and 18 is not linked in any way to the printed circuit board 20. Therefore, the guidance system 14, 16 and 18 would not be able to act as electrical power contacts. The combination does not suggest Appellant's claims, and a rejection based on obviousness is improper for claim 5.

E. The rejection of claim 14 is improper.

The rejection of Claim 14 is separately contested from the rejection of Claims 1 et al. Claim 14 sets forth that the magnetic flux conduction member comprises two metal pins made of steel. Weber discloses that the guidance system 14, 16 and 18 can be made of a ferrous material, such as iron. However, Weber does not disclose or suggest that the guidance system 14, 16 and 18 is made of steel as required by Appellant's claims. Therefore, the combination of Weber and

member 25 is fixed to the printed circuit board 5, and the electronic circuit 100 is fixed on the printed circuit board 5. The rejection is improper, and Appellant requests that it be withdrawn.

C. The rejection of Claims 1-5, 8-10 and 14-16 under 35 U.S.C. 103(a) is improper.

The Examiner finally rejected Claims 1-5, 8-10 and 14-16 as being obvious over Weber (PCT publication number WO 98/27460) in view of Hulsmann (United States Patent No. 6,107,713). Weber discloses an electric motor 30 having a sensor that determines the number of revolutions of an armature shaft 12. A signal guidance system 14, 16 and 18 guides the signal from a magnetic ring 10 to a signal receiver 22, 24 on a printed circuit board 20. Hulsmann discloses a motor/transmission combination 1 having a printed circuit board 22 with plug-in contact elements 203 that terminate in a plug-in-connection part 213. The Examiner argues that it would be obvious to provide the plug-in contact elements of Hulsmann on the printed circuit board 20 of Weber, and therefore Appellant's claims are obvious.

The present invention is patentable and strikingly different from the combination of Weber and Hulsmann. As described by the claims, the present invention provides a connector for an electric motor having:

> ...a magnetic flux conduction member forming a flux concentrator interposed, when said connector is fixed on the motor, between said magnetic ring and a Hall-effect sensor adapted so as to measure magnetic flux conducted by said magnetic flux conduction member, and a printed circuit having a current supply source for said motor fixed thereon.

[See Claim 1]. Claims 1-16 of the present invention all share this same or similar feature. [See Claims 1-16].

It would not be obvious to add the plug in contact elements 203 of Hulsmann to the printed circuit board 20 of Weber. For one, the plug in contact elements 203 of Hulsmann do not supply current as required by Appellant's claims. The plug in contact elements 203 terminate in a plug in connection part 213 that is connected to an electric power supply line. The electric power supply line provides the power, not the plug in contact elements 203. Therefore, the plug in contact

H. The rejection of claim 7 is contested.

I. The rejection of claims 11-13 is contested.

PATENTABILITY ARGUMENTS

A. The rejection of Claims 1-16 under 35 U.S.C. 112, first paragraph is improper.

Claims 1-16 stand rejected under 35 USC 112, first paragraph, as containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the claimed invention. The Examiner states that the specification and the drawings do not clearly describe or show "a current supply source" fixed on the printed circuit board. In paragraph 18 of the application, the specification discloses that the printed circuit board 5 "supports an electronic circuit able to deliver a supply current for the motor." The Examiner states that the current supply source is not clearly shown or described. However, one skilled in the art would know how the electronic circuit would be able to supply current for the motor. For example, as the Examiner suggests, the current supply source could be a battery or terminals. One skilled in the art would know that a battery or other current supply source would be used to allow the electronic circuit to supply current for the motor. The rejection is improper, and Appellant respectfully requests tat the rejection be withdrawn.

B. The rejection of Claims 1-16 under 35 U.S.C. 112, first paragraph is improper.

Claims 1-16 also stand rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention and for omitting essential relationships of elements. The Examiner contends the claims are indefinite because it is not clear if the current supply source is a battery or terminals used to provide current to the motor. The specification clearly states that the electronic circuit is able to deliver the supply current for the motor. One skilled in the art would know that a battery or terminals would allow the electronic circuit to supply the current to the motor. The Examiner also contends the relationship between the current supply source and the magnetic flux member has not been described as having any relationship. As disclosed in paragraph 20, it is disclosed that one end of the magnetic flux conduction

ISSUES

A. Are Claims 1-16 properly rejected under 35 U.S.C. 112, first paragraph?

B. Are Claims 1-16 properly rejected under 35 U.S.C. 112, second paragraph?

C. Are Claims 1-5, 8-10 and 14-16 properly rejected under 35 U.S.C. 103(a) based on Weber in view of Hulsmann?

D. Is claim 5 properly rejected under 35 U.S.C. 103(a) based on Weber in view of Hulsmann?

E. Is claim 14 properly rejected under 35 U.S.C. 103(a) based on Weber in view of Hulsmann?

F. Is claim 16 properly rejected under 35 U.S.C. 103(a) based on Weber in view of Hulsmann?

G. Is claim 6 properly rejected under 35 U.S.C. 103(a) based on Weber in view of Hulsmann and Blancher?

H. Is claim 7 properly rejected under 35 U.S.C. 103(a) based on Weber in view of Hulsmann and Blancher?

I. Are Claims 11-13 properly rejected under 35 U.S.C. 103(a) based on Weber in view of Hulsmann and Wiesler?

GROUPINGS OF CLAIMS

A. The rejection of Claims 1-16 under 112, first paragraph, is contested.

B. The rejection of Claims 1-16 under 112, second paragraph, is contested.

C. The rejection of 1-5, 8-10 and 14-16 is contested.

D. The rejection of claim 5 is separately contested, that is, the rejections of claim 5 does not stand or fall with the rejection of the other claims.

E. The rejection of claim 14 is separately contested, that is, the rejections of claim 14 does not stand or fall with the rejection of the other claims.

F. The rejection of claim 16 is separately contested, that is, the rejections of claim 16 does not stand or fall with the rejection of the other claims.

G. The rejection of claim 6 is contested.

STATUS OF CLAIMS

Claims 1-16 stand finally rejected under §112, first paragraph and second paragraph, and under §103(a).

STATUS OF AMENDMENTS

All amendments have been entered.

SUMMARY OF THE INVENTION

As shown in Figure 1, this invention relates to a connector 30, 130 for an electric motor 2, 102 that includes a magnetic flux conduction member 35, 135. The magnetic flux conduction member 35, 135 is interposed between a magnetic ring 30, 130 and a Hall-effect sensor 33, 133. The Hall-effect sensor 33, 133 measures the magnetic flux conducted by the magnetic flux conduction member 35, 135. The connector 30, 130 further includes a printed circuit 5, 105 having a current supply source 100 for the motor 2, 102 fixed thereon. This basic structure is set forth in claims 1 and 10.

Claim 5, which depends on claim 4, adds that the connector 130 includes at least two electrical power contacts 132 that are part of the magnetic flux conduction member 135 and linked to the current supply source 100. Claim 6 depends on claim 5 and adds that at least one electrical power contact 132 is connected to a metal pad 112 having a part 140 which is in a vicinity of the magnetic ring 130. Claim 7 also depends on claim 5 and adds the at least one power contact 132 is made of steel. Claim 16, which also depends on claim 4, adds that the connector 130 includes at least two electrical power contacts 132 linked to the current supply source 100. A metal pad 112 overlapping the magnetic ring 130 is inserted into an end 132B of the power contacts 132.

Claims 11, 12 and 13 depend on claim 10 and add that the geared motor is for an automobile accessory. The automobile accessory is a window in claim 11, a seat in claim 12, and a sunroof in claim 13.

Claim 14, which depends on claim 3, adds that the magnetic flux conduction member includes two metal pins that are made of steel.